

REMARKS

Claims 1-33 are pending and active in the subject application. Claims 1, 4, 5, 11, 16-18, 24-26, and 29-31 are rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,396,634 to Shenouda et al. Shenouda et al. describes a shrimp analogue product that is prepared by:

extracting from a fish the myofibrillar proteins;
solubilizing the myofibrillar proteins with salts;
adding to the solubilized protein a starch, flavor, and an organic acid to form a paste;
heating the paste to set the paste and denature the protein;
shredding the heat set paste into filaments;
mixing the filaments with a protein based binder followed by molding the mixture into shrimp-like pieces; and
setting the moulded filament binder mixture to provide a cohesive shrimp analogue product.

For the following reasons, applicants respectively traverse this rejection.

Independent Claims 1 and 30, from which dependent Claims 4, 5, 11, 16-18, 24-26, 29 and 31 depend, are novel and nonobvious over Shenouda et al. because Shenouda et al. does not disclose "seafood portions." Seafood portions are described in the present specification at page 4, line 13, as including small chunks or comparatively larger fillets of seafood. According to Claim 1, such "seafood portions" are treated to produce surface modified portions which are then coated with a binder. According to Claim 30, "seafood portions" are treated to free binding sites on the surface of the seafood portions and then binder with functional group suitable to attach to binding sites on the seafood portions is added. Shenouda et al. does not teach or suggest treatment of "seafood portions" with a binder as recited in independent Claim 1 and

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independent Claim 30. Shenouda et al. describes extracting myofibrillar proteins from fish (e.g., seafood portions), and solubilizing the extracted myofibrillar proteins. Following the solubilization and isolation of the solubilized proteins, starch, flavor, and inorganic acid are added to form a paste which is then heat set. The resulting heat set seafood analogue paste is then shredded into filaments which are then bound with a protein prior to molding the filament-binder mixture into shrimp-like pieces. Shenouda et al. describes coating filaments formed from the heat set seafood analogue paste with a protein binder; however, Shenouda et al. does not disclose binder treatment of a "seafood portion." Shenouda's shredded filaments of heat set seafood analogue paste does not teach or suggest the recited "seafood portions." For at least this reason, applicants assert that the subject matter of independent Claim 1 and independent Claim 30 is novel and nonobvious over Shenouda et al.

The subject matter of dependent Claims 24-26 is novel and nonobvious over Shenouda et al., because Shenouda et al. does not disclose or suggest seafood portions that are fillets. The shredded filaments of heat set seafood analogue paste does not teach or suggest seafood portions in the form of fillets. For at least this reason, the subject matter of Claims 24-26 is novel and nonobvious in view of Shenouda et al.

For the foregoing reasons, the subject matter of Claims 1, 4, 5, 11, 16-18, 24-26 and 29-31 is novel and nonobvious over Shenouda et al.

New Claims 34 and 35 recite that the seafood portions comprise chunks or fillets of seafood. Shenouda et al. does not teach application of a binder to chunks or fillets of seafood. Accordingly, the subject matter of new Claims 34 and 35 is novel and nonobvious over Shenouda et al..

New Claims 36 and 37 recite that the surface modified seafood portions comprise salt soluble proteins. In contrast, Shenouda et al. seeks to solubilize all of the myofibrillar proteins comprising the fish flesh and thus does not teach surface modified seafood portions that still

comprise salt soluble proteins. Accordingly, the subject matter of new Claims 36 and 37 is novel and nonobvious over Shenouda et al.

Claims 2, 3, 6, 7, 12-13, 19-23, and 27-33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shenouda et al.. For the following reasons, applicants respectfully traverse this rejection.

Claims 2, 3, 6, 7, 12-13, 19-23 and 27-29 depend from Claim 1 and therefore are nonobvious over Shenouda et al. for the same reason that independent Claim 1 is nonobvious over Shenouda et al. In addition, Claim 12 recites that the seafood portions are methodically oriented throughout the product. Shenouda et al. does not teach or suggest methodical arrangement of seafood portions within a seafood product. Accordingly, the subject matter of dependent Claim 12 is nonobvious over Shenouda et al.

Dependent Claim 21 recites that the temperature of the seafood portions does not exceed 28°F during steps (a), (b), and (c) of Claim 1. The subject matter of Claim 21 is not anticipated by Shenouda et al. because Shenouda et al. teaches heat setting a mixture of solubilized protein, starch, flavor and an organic acid at 70°C to 120°C, prior to adding the protein based binder. (See Col. 3, line 33 of Shenouda et al.) For this reason, the subject matter of dependent Claim 21 is novel and nonobvious over Shenouda et al.

With respect to Claims 30-33, as discussed above with respect to independent Claim 30, the subject matter of independent Claims 30, 32, and 33 is nonobvious over Shenouda et al. because Shenouda et al. does not suggest the use of "seafood portions," but rather teaches the use of filaments formed from solubilized seafood proteins. Additionally, similar to Claim 12 discussed above, Claim 33 recites methodically arranging seafood portions, a feature of the claimed invention that is not suggested by Shenouda et al.

For the foregoing reasons, the subject matter of Claims 2, 3, 6, 7, 12-13, 19-23, and 27-33 is nonobvious over Shenouda et al.

Claims 1, 4, 5, 7, 10, 12-16, 24, 25, and 28-33 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,897,573 to Kelly. For the following reasons, applicants respectfully traverse this rejection.

Independent Claim 1 from which dependent Claims 4, 5, 7, 10, 12-16, 24, 25, and 28-29 depend and; independent Claim 30, from which dependent Claim 31 depends, each recite that "seafood portions" are treated with a phosphate to modify the surface of the seafood portions, followed by adding a binder to the treated seafood portions. This combination of steps is not taught or suggested by Kelly. Kelly teaches that seafood portions, such as fish, are treated with salt in the form of sodium chloride (see Col. 2, lines 26-27) after which the salted fish is treated with a binder that is formed using a phosphate. Kelly does not teach treatment of a seafood portion with a phosphate prior to contacting such a seafood portion with a binder. Accordingly, Kelly does not anticipate or suggest the subject matter of independent Claim 1 and independent Claim 30 and the claims that depend therefrom.

Turning specifically to dependent Claim 28, Kelly does not teach or suggest a binder that comprises less than 5% by weight of the product. Kelly at Col. 3, lines 19-21, teaches that about 5% or more binder is employed. Accordingly, the subject matter of dependent Claim 28 is not anticipated or suggested by Kelly.

Independent Claim 32 is novel and nonobvious over Kelly because Kelly teaches away from the recited random arrangement of seafood portions. Specifically, Kelly teaches at Col. 3, beginning at line 27, an ordered arrangement of fillets in a roughly parallel configuration. At Col. 3, lines 27-35, Kelly teaches that random arrangement of the fish pieces is undesirable because of the appearance random arrangement creates in the resulting sliced product. For this reason, the subject matter of independent Claim 32 is novel and nonobvious over Kelly.

Independent Claim 33 has been amended above to recite that the surface modification of the native proteins in the seafood portions is achieved using a phosphate. As discussed above with respect to

independent Claim 1 and independent Claim 30, Kelly does not teach or suggest the use of phosphate to modify the surface of seafood portions that are to be bound by a surimi-based binder.

For the foregoing reasons, the subject matter of Claims 1, 4, 5, 7, 10, 12-16, 24, 25, and 28-33 are novel and nonobvious over Kelly.

Claims 2, 3, 6, 8, 9, 11, and 18-23 are rejected under 35 U.S.C. § 103 as being unpatentable over Kelly. For the following reasons, applicants respectfully traverse this rejection.

Claims 2, 3, 6, 8, 9, 11, and 18-23 depend from independent Claim 1 and accordingly, the arguments set forth above regarding independent Claim 1 and the Kelly reference are also applicable to these dependent claims.

Dependent Claim 11 recites that the seafood portions are randomly oriented throughout the product. As noted above, with respect to Claim 32 and the Kelly reference, Kelly teaches away from the random orientation of its fish fillets. Accordingly, the subject matter of Claim 11 is nonobvious over Kelly.

Dependent Claim 19 recites a further step of elevating the temperature of the formed product to about 350°F for about 15 seconds. Kelly teaches that its fillets are methodically oriented, frozen, and then smoked at temperatures up to 200°F. See Kelly at Col. 1, line 58. Kelly does not teach or suggest elevating the product temperature to about 350°F for about 15 seconds. Accordingly, the subject matter of Claim 19 is novel and nonobvious over the teachings of Kelly.

Claims 1, 2, 4, 5, 7, 8, 14, 16-18, and 22 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,579,741 to Hansen. For the following reasons, applicants respectfully traverse this rejection.

Claim 1, as amended above, recites that binder is used in an amount that is less than 10 wt.% of the seafood product. The subject matter of Claim 1 is novel and nonobvious over Hansen because Hansen does not teach this feature of Claim 1. In Example 2, Hansen teaches much larger amounts of binder on the order of 60 wt% (30.5 + 30.5 wt.% surimi). Lower amounts down to about 25 wt.% (see Col. 4,

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line 2) are described by Hansen, but not an amount less than about 10 wt.%. For this reason, the subject matter of independent Claim 1 and Claims 2, 4, 5, 7, 8, 14, 16-18, and 22 that depend therefrom are novel and nonobvious over Hansen.

For the foregoing reasons, the subject matter of the pending claims is novel and nonobvious over the applied art. Accordingly, applicants respectfully request withdrawal of the outstanding rejections and allowance of the new claims. If the reviewing party has any questions regarding the above, he is invited to call applicant's attorney at the number listed below so that any outstanding issues can be resolved in a timely and efficient manner.

Respectfully submitted,

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